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**REMARKS**

Claims 3-6 and 8-20 are pending in this application.

Claims 3-6 and 8-20 are rejected.

In the office action dated January 24, 2003 and made final, claim 8 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite, and claim 9 is objected to. Claims 8 and 9 have been amended to correct typographical errors and thereby overcome the '112 rejection and the objection. The examiner is thanked for pointing out these errors.

The office action dated January 24, 2003 indicates that claims 8 and 18 are rejected under 35 U.S.C. §102(e) as being unpatentable over Acharya et al. U.S. Patent No. 6,348,929. This rejection is respectfully traversed.

Claim 8 recites a method of processing a digital image produced by an optical system. The optical system includes a sensor that detects less than full color at each pixel location. The method includes accessing an operator including an array of weights, forming a plurality of input vectors from the image; and applying the operator to the input vectors to produce a full color digital image.

Acharya et al. do not teach or suggest generating a full color image from an image having less than full color information at each pixel. Acharya et al. disclose a method for scaling an original image in its color filter array (CFA) form. Figure 2 of Acharya et al. illustrates a type of CFA pattern known as a Bayer pattern, which is generated by repeating a 2x2 sensor array kernel having two green sensors, one red sensor, and one blue sensor. Each pixel of the original image provides information about one color only (red or green or blue).

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Each pixel of the scaled image provides information about one color only. Figure 2 of Acharya et al. also shows the scaled result. Moreover, at column 11, lines 2-4, Acharya et al. state that the "scaled image pixels will have a color plane distribution pattern such as the Bayer pattern that is identical to the original CFA." Thus each pixel of the scaled image provides only one of red, green and blue color information.

Thus Acharya et al. do not teach or suggest any method whatsoever for generating an image having full color information at each pixel from an image having less than full color information at each pixel. That being the case, Acharya et al. do not teach or suggest generating the full color image by applying an operator to the original image, let alone by applying an operator having weights that are determined by at least one property of an optical system. Therefore, claim 8 should be allowed over Acharya et al alone.

The office action incorrectly contends that the weights of Acharya et al.'s filter are based on properties of an optical system. See col. 7, lines 42-44 of Acharya et al., which states that the weights are designed to ensure "that the center pixel has no more than four times the weight of the corner pixels." Thus the weights are fixed and not dependent upon at least one property of a particular optical system.

Claim 8 and its dependent claims 3-6 and 9-17 should be allowed over the documents made of record because none of these documents teach or suggest an operator having weights that are determined by at least one property of an optical system.

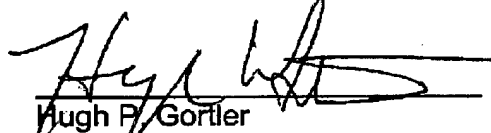
Claim 18 recites a method of generating a transformation matrix for demosaicing a digital image. The method comprises using camera parameters to

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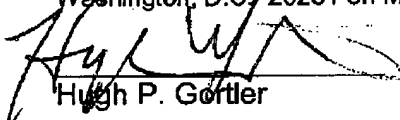
design coefficients for the transformation matrix. This claim, and its dependent claims 19-20, should also be allowable because none of the cited documents teach or suggest using camera parameters to generate coefficients of a demosaicing operator.

The examiner is respectfully requested to withdraw the rejections of the claims and issue a notice of allowability. If any issues remain, the examiner is invited to contact the undersigned.

Respectfully submitted,

  
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